AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) A mobile communication device comprising:

a plurality of signal detectors mounted on the mobile communication device, the plurality of signal detectors being placed in close proximity to one another and forming a small array, each signal detector configured to provide a respective detected signal having a desired component plus an undesired component;

a first beam forming unit operatively coupled to the plurality of signal detectors and configured to process the plurality of detected signals to generate a first signal having the desired component plus a portion of the undesired component;

a second beam forming unit operatively coupled to the plurality of signal detectors and configured to process the plurality of detected signals to generate a second signal having mostly the undesired component;

an activity detector configured to receive the first and second signals, to detect for speech activity based on the first and second signals, and to provide a control signal indicative of detected speech activity;

a controller operatively coupled to the first and second forming units and the activity detector and configured to receive the control signal, to enable the first beam forming unit to adapt during periods of speech activity, and to enable the second beam forming unit to adapt during periods of non-speech activity; and

a noise suppression unit operatively coupled to the first and second beam forming units and configured to receive and digitally process the first and second signals to obtain an output signal having substantially the desired component and a large portion of the undesired component removed.

2. (Previously presented) The device of claim 1, wherein the first beam forming unit comprises a first set of at least one adaptive filter, each adaptive filter in the first set configured to filter a respective detected signal to minimize an error between an output of the adaptive filter and a designated detected signal during the periods in which the first beam forming unit is enabled, and

wherein the second beam forming unit comprises a second set of at least one adaptive filter, each adaptive filter in the second set configured to filter a respective detected signal to minimize an error between an output of the adaptive filter and the second signal during the periods in which the second beam forming unit is enabled.

3. (Previously presented) The device of claim 1, wherein the first and second beam forming units and the noise suppression unit are implemented within a digital signal processor (DSP).

4. (Original) The device of claim 1, wherein the signal detectors are microphones.

5. (Original) The device of claim 4 and comprising two microphones.

6. (Previously presented) The device of claim 1, wherein the noise suppression unit is operative to remove the undesired component in the first signal using spectrum modification.

7. (Previously presented) The device of claim 1, wherein the noise suppression unit digitally processes the first and second signals in the frequency domain.

8. (Original) The device of claim 7, wherein the noise suppression unit includes

a first transformer coupled to the first beam forming unit and configured to receive and transform the first signal into a first transformed signal, and

a second transformer coupled to the second beam forming unit and configured to receive and transform the second signal into a second transformed signal.

9. (Original) The device of claim 8, wherein the noise suppression unit further includes

a multiplier configured to receive and scale the first transformed signal with a set of coefficients.

10. (Original) The device of claim 9, wherein the set of coefficients are derived based on spectrum subtraction.

11. (Original) The device of claim 9, wherein the noise suppression unit further includes

a noise spectrum estimator operative to receive and process the second transformed signal to provide a noise spectrum estimate, and

a gain calculation unit operative to receive the first transformed signal and the noise spectrum estimate and provides the set of coefficients for the multiplier.

12. (Previously presented) The device of claim 11, wherein the noise spectrum estimator is operative to provide a time-varying noise spectrum estimate.

13. (Currently amended) The device of claim 1, wherein the noise suppression unit comprises

an adaptive filter operative to receive and process the first and second signals and to provide a filtered signal having correlated noise removed ~~wherein the noise suppression unit includes an activity detector configured to receive the first and second signals and provide a control signal indicative of the periods of speech activity~~.

14. (Currently amended) The device of claim 8, wherein the noise suppression unit comprises

an adaptive filter operative to receive and process the first and second transformed signals in the frequency domain and to provide a filtered signal having correlated noise removed ~~13, wherein the first and second beam forming units are adjusted based on the control signal from the activity detector~~.

15. (Original) The device of claim 1 and operative to receive and process far-field signals.

16. (Original) The device of claim 1 and operative to receive and process near-field signals.

17. (Previously presented) The device of claim 1, wherein each of the first and second beam forming units includes

at least one adaptive filter, each adaptive filter operative to receive and process a signal from a respective signal detector to provide a corresponding filtered signal.

18. (Original) The device of claim 17, wherein each adaptive filter implements a least mean square (LMS) algorithm.

19. (Original) The device of claim 1, wherein the device is a cellular phone.

20. (Currently amended) A wireless communication device comprising:

at least two microphones mounted on the wireless communication device, the at least two microphones being placed in close proximity to one another and forming a small array, each microphone configured to detect and provide a respective signal having a desired component plus an undesired component; and

a signal processor coupled to the at least two microphones and configured to receive and digitally process the detected signals from the microphones with a first beam forming unit to obtain a first signal having the desired component plus a portion of the undesired component, to process the detected signals with a second beam forming unit to obtain a second signal having mostly the undesired component, to detect for speech activity based on the first and second signals, to determine periods of speech activity and periods of non-speech activity based on the detected speech activity, to enable the first beam forming unit to adapt during the periods of speech activity, to enable the second beam forming unit to adapt during the periods of non-speech activity, and to process the first and second signals to obtain an output signal having substantially the desired component and a large portion of the undesired component removed.

21. (Original) The device of claim 20, wherein the signal processor digitally processes the detected signals in the frequency domain.

22. (Original) The device of claim 20, wherein the signal processor digitally processes the detected signals in the time domain.

23. (Original) The device of claim 20, wherein the signal processor is operative to remove the undesired component from the output signal using spectrum subtraction.

24. (Previously presented) The device of claim 20,

wherein the first beam forming unit comprises a first set of at least one adaptive filter, each adaptive filter in the first set configured to filter a respective detected signal to minimize an error between an output of the adaptive filter and a designated detected signal during the periods in which the first beam forming unit is enabled, and

wherein the second beam forming unit comprises a second set of at least one adaptive filter, each adaptive filter in the second set configured to filter a respective detected signal to minimize an error between an output of the adaptive filter and the second signal during the periods in which the second beam forming unit is enabled.

25. (Original) The device of claim 20, wherein the signal processor is operative to process far-field signals or near-field signals.

26. (Original) The device of claim 20, wherein the microphones are placed close to each other relative to a wave-length of sound and not in an end-fire type of configuration.

27. (Currently amended) An apparatus comprising:

means for detecting at least two signals via at least two signal detectors mounted on the apparatus, the at least two signal detectors being placed in close proximity to one another and forming a small array, wherein each detected signal includes a desired component plus an undesired component;

means for processing the detected signals with a first beam forming unit to obtain a first signal having substantially the desired component plus a portion of the undesired component;

means for processing the detected signals with a second beam forming unit to obtain a second signal having mostly the undesired component;

means for detecting for speech activity based on the first and second signals and providing a control signal indicative of detected speech activity;

means for enabling the first beam forming unit to adapt during periods of speech activity;

means for enabling the second beam forming unit to adapt during periods of non-speech activity; and

means for digitally processing the first and second signals to obtain an output signal having substantially the desired component and a large portion of the undesired component removed.

28. (Previously presented) The apparatus of claim 27, wherein the means for digitally processing the first and second signals includes

means for removing the undesired component from the output signal using spectrum subtraction.

29. (Previously presented) The apparatus of claim 28, wherein the means for digitally processing the first and second signals further includes

means for estimating a noise spectrum of the undesired component based on the second signal,

means for deriving a set of coefficients based on spectrum subtraction, and

means for scaling transformed representation of the first signal based on the set of coefficients.

30. (Previously presented) The apparatus of claim 29, wherein the means for digitally processing the first and second signals includes

means for providing a time-varying noise spectrum estimate.

31. (Previously presented) A mobile communication device comprising:

first and second microphones mounted on the mobile communication device in close proximity to one another, the first microphone configured to provide a first signal having a desired component plus a portion of an undesired component, and the second microphone configured to provide a second signal having mostly the undesired component; and

a noise suppression unit coupled to the first and second microphones and configured to receive and digitally process the first and second signals to obtain an output signal having substantially the desired component and a large portion of the undesired component removed.

32. (Previously presented) The mobile communication device of claim 31, wherein the first and second microphones are dipole microphones pointed in different directions.